

## S- 16 Sewer Pump Station Improvements

### Adopted Description and Scope

This ongoing program funds rehabilitation of the 36 pump and 10 flush stations in Bellevue's wastewater system. Stations are prioritized based on the risk and consequence of failure, maintenance and operations experience, pump station age, and coordination with other projects. Stations scheduled for work in 2015-21 include: Lake Heights, Wilburton, Cedar Terrace, Lake Hills #17, Cozy Cove, Parkers, Evergreen East, Evergreen West, Fairweather, Hunt's Point, Lake Hills #6, and Lake Hills #7. Historically this program funded rehabilitation of one station per year. Two stations/year are planned beyond 2017 since the electrical and mechanical equipment in them will have reached their 25-30 year useful life. Analysis of 25 stations is currently underway to improve the forecast needs for schedule and cost, and could result in reprioritization of scheduled stations.

PROJECT NEED: System Renewal and Replacement

### Adopted Budget (includes inflation)

S-16	2015	2016	2017	2018	2019	2020	2021
	\$512,000	\$1,340,000	\$2,310,000	\$1,075,000	\$1,097,000	\$1,090,000	\$995,000

### Historical Expenditures

S-16	2009	2010	2011	2012	2013	2014	2015
	\$121,000	\$203,000	\$986,000	\$470,000	\$450,000	\$293,000	\$526,000

**Average expenditures per year (2009-2015) = \$436,000**

### Proposed Changes

Scope: The scope of the Grange PS will be expanded to accommodate a deeper wet well and rebuild of the station. This will allow the new sewer line through Meydenbauer Bay Park to gravity to the pump station without the need of a lift station at the west end of the park.

A 2014 analysis of pump stations recommends more selective station rehabilitation, focusing on components rather than complete stations. That may affect the order of stations rehabilitated, but should not affect overall budget in this CIP window. Scheduling of that work will affect the order and cost of stations shown in the table, and will be reflected in the next CIP update.

Schedule: The schedule has been updated to accelerate completion of Grange PS Rehabilitation to accommodate Parks development schedule. Improvements proposed at Wilburton PS were found not to be urgent and have been deferred to outside of this CIP window.

Cost: Costs for planned station rehabilitations are shown below. An increase of \$387,000 in 2017 budget is requested to accommodate accelerating Grange PS to accommodate Parks schedule, while keeping other projects on schedule.

## Proposed Budget (includes inflation)

S-16	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	\$512,000	\$1,340,000	\$2,310,000	\$1,075,000	\$1,097,000	\$1,090,000	\$995,000	\$0	\$0
Proposed	\$512,000	\$1,340,000	\$2,697,000	\$1,075,000	\$1,097,000	\$1,090,000	\$995,000	\$1,188,000	\$1,082,000
Difference	\$0	\$0	\$387,000	\$0	\$0	\$0	\$0	\$1,188,000	\$1,082,000

## Detailed Budget Development: (inflation included in totals; project costs in 2015\$)

S-16	2015	2016	2017	2018	2019	2020	2021	2022	2023
Misc PS Imp.	\$1,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
PS #12 Investigation	\$2,000								
WWPS Condition Ass.	\$63,000								
Sewer PS Wet Well Rehab 2014	\$11,000								
Lake Heights PS Rehab	\$166,000	\$784,000							
Wilburton PS Rehab	\$2,000								
Sewer PS Generator Receptacle Phase 2	\$55,000								
Emerald Ridge PS Post Const Invest.	\$14,000	\$3,000							
Grange PS Replacement	\$242,000	\$1,230,000	\$895,000						
Yarrow Point PS Wetwell Rehab	\$170,000	\$40,000							
Cedar Terrace PS Rehab		\$80,000	\$235,000						
Lake Hills #17 PS Rehab		\$130,000	\$390,000						
Lake Hills #18 PS Rehab			\$130,000	\$385,000					
Lake Hills #19 PS Rehab			\$130,000	\$385,000					
Cozy Cove PS Rehab				\$128,000	\$390,000				
Parkers Sewer PS Rehab				\$105,000	\$354,000				
Evergreen East PS Rehab					\$130,000	\$385,000			
Evergreen West PS Rehab					\$130,000	\$385,000			
Fairweather Basin PS Rehab						\$80,000	\$235,000		
Hunt's Point PS Rehab						\$127,000	\$385,000		
Lake Hills #6 PS Rehab							\$125,000	\$390,000	
Lake Hills #7 PS Rehab							\$129,000	\$390,000	
Lakecrest LS Rehab								\$130,000	\$390,000
Medina City Hall PS Rehab								\$115,000	\$340,000
Newport LS Rehab									\$105,000
Newport PS Rehab									\$80,000
<b>Total (2015\$)</b>	\$726,000	\$2,269,000	\$1,782,000	\$1,005,000	\$1,006,000	\$992,000	\$876,000	\$1,027,000	\$917,000
<b>Proposed Budget (with Inflation)</b>	\$512,000	\$1,340,000	\$2,697,000	\$1,075,000	\$1,097,000	\$1,090,000	\$995,000	\$1,188,000	\$1,082,000

**Policy Input Requested:** Should the program budget be increased as proposed?

## S-24 Sewer System Pipeline Major Repairs

### **Adopted Description and Scope**

This program funds major repairs to sewer pipes where there is a cost-effective solution to extend the pipe's service life. Most defects are identified from the Utility's infrastructure condition assessment (video) program. Pipes are prioritized for repair based on risk of failure (likelihood and consequence), failure history, and to coordinate with other construction such as planned street overlays, which reduces restoration costs.

PROJECT NEED: System Renewal and Replacement

### **Adopted Budget (includes inflation)**

S-24	2015	2016	2017	2018	2019	2020	2021
	\$1,232,000	\$1,836,000	\$1,873,000	\$1,911,000	\$1,949,000	\$1,988,000	\$2,027,000

### **Historical Expenditures**

S-24	2009	2010	2011	2012	2013	2014	2015
	\$1,203,000	\$1,242,000	\$681,000	\$1,271,000	\$1,092,000	\$1,983,000	\$1,494,000

**Average expenditures per year (2009-2015) = \$ 1,281,000**

### **Proposed Changes**

Scope: No change is proposed. As proposed, this program funds approximately 43 dig and repair projects, and 9 trenchless repair projects.

Schedule: No change is proposed; this will continue as an ongoing major repair program.

Cost: No change is proposed. Cost per repair has increased from \$25,000 to \$30,000. The programmed budget increase in 2016 and beyond should accommodate the increased cost per repair, and anticipated higher number of repairs.

### **Proposed Budget (includes Inflation)**

S-24	2015	2016	2017	2018	2019	2020	2021	2022	2023
	\$1,232,000	\$1,836,000	\$1,873,000	\$1,911,000	\$1,949,000	\$1,988,000	\$2,027,000	\$2,068,000	\$2,109,000

### **Policy Input Requested:**

None

## S-32 Minor (Small) Sewer Capital Improvement Projects

### Adopted Description and Scope

This ongoing program pays for minor improvements to Bellevue's sewer system to resolve deficiencies, improve efficiencies, or resolve maintenance problems, often in conjunction with other programs such as the Transportation overlay program. The program also investigates the feasibility of possible sewer extensions. Projects are prioritized based on criteria including public safety/property damage, maintenance frequency, operator safety, environmental risk, reliability and efficiency gains, coordination with other city projects or development activity, and level of service impact.

PROJECT NEED: System Renewal and Replacement

### Adopted Budget (includes inflation)

S-32	2015	2016	2017	2018	2019	2020	2021
	\$103,000	\$106,000	\$108,000	\$110,000	\$112,000	\$115,000	\$117,000

### Historical Expenditures

S-32	2009	2010	2011	2012	2013	2014	2015
	\$98,000	\$64,000	\$98,000	\$24,000	\$90,000	\$134,000	\$230,000

**Average expenditures per year (2009-2015) = \$ 105,000**

### Proposed Changes

Scope: No changes are proposed.

Schedule: No changes proposed. This program should continue to be funded annually.

Cost: No change proposed. Note, the 2015-16 actual expenditures will exceed budget by ~\$650,000, to coordinate with a development project (city paid incremental cost of upsizing a main). That cost will be covered by a reserve transfer. No budget adjustment is proposed.

### Proposed Budget (includes inflation)

S-32	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Total</b>	\$103,000	\$106,000	\$108,000	\$110,000	\$112,000	\$115,000	\$117,000	\$119,000	\$122,000

Policy Input Requested: none

**Project will be completed in 2016; won't be included in CIP update**

**S-52 East CBD Sewer Trunkline Improvements**

**Adopted Description and Scope**

This project will replace approximately 1,600 feet of sewer pipe with larger diameter pipelines, to convey sewage generated from planned growth in the eastern side of downtown Bellevue, generally east of 110th Ave NE. This project may be adjusted to accommodate the construction alignment and schedule of the Sound Transit EastLink Light Rail.

PROJECT NEED: System Expansion

**Adopted Budget (includes inflation)**

S-52	2015	2016	2017	2018	2019	2020	2021
	\$2,613,000	\$21,000	-	-	-	-	-

Note: Adopted 2015 budget was \$2,203,000. Budget increased by 410,000 on 4/20/2015 to cover actual project costs.

**Proposed Changes**

Scope: No change

Schedule: No change proposed. Project complete on schedule.

Cost: Project is expected to be completed within approved budget.

**Proposed Budget (inflation included)**

S-52	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total	\$2,613,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Policy Input Requested:** None

**Project will be completed in 2016; won't be included in CIP update**

## **S-53 Bellefield Pump Station Capacity Improvement**

### **Adopted Description and Scope**

This project will replace the existing Bellefield Pump Station and pressurized discharge pipe with larger facilities of sufficient capacity to meet the needs of planned growth in the eastern side of downtown Bellevue, generally east of 110th Ave NE. This project may be adjusted to accommodate the construction schedule of the Sound Transit EastLink Light Rail.

PROJECT NEED: System Renewal & Replacement; System Expansion

### **Adopted Budget (includes inflation)**

S-53	2015	2016	2017	2018	2019	2020	2021
	\$7,488,000	\$1,068,000	-	-	-	-	-

### **Proposed Changes**

Scope: No change.

Schedule: No change proposed. Project complete on schedule.

Cost: The project may exceed budgeted cost, due to complications during construction. Anticipated over expenditures will be paid from savings in other projects.

### **Proposed Budget (includes inflation)**

S-53	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total	\$7,488,000	\$1,068,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Policy Input Requested:** None

## S-58 Lake Washington Sewer Lake Line Assessment Program

### **Adopted Description and Scope**

This program is focused on assessing the 14.5 miles of sewer pipe along the Lake Washington shoreline; predicting its remaining life, and developing a strategy for its replacement. It includes condition assessment to collect pipe samples of asbestos cement and cast iron pipes in and analysis of viable alternatives for replacement of logical pipe reaches. Replacement of some of the sewer lake lines will likely be required just beyond this CIP Window.

Replacement of the Meydenbauer Bay Park sewer lake line was formerly included in this project; it has been moved to its own project, S-69. Assessment of sewer lines along the Lake Sammamish shoreline is not included, since those pipes are newer and likely to last longer.

PROJECT NEED: System Renewal and Replacement

### **Adopted Budget (includes inflation)**

S-58	2015	2016	2017	2018	2019	2020	2021
	\$360,000	\$132,000		-	-	-	-

### **Proposed Changes**

Scope: No change is proposed.

Schedule: The project schedule has been extended to 2017. Project was started later than anticipated due to staffing vacancy.

Cost: Budget increase of \$150,000 is proposed based on refined engineer's estimate, to provide high level analysis of viable alternatives for replacement of logical pipe reaches, following completion of condition assessment.

### **Proposed Budget (includes inflation)**

S-58	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total	\$360,000	\$132,000	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0

Cost beyond 2023: None. Project does not include any implementation.

**Policy Input Requested:** None

## S-59 Add On-site Generation at Sewer Pump Stations

### Adopted Description and Scope

This project will add on-site power generation capability at three high priority pumping stations which currently rely on portable generators during power outages. Specific locations would be selected based on a study evaluating the likelihood and consequence of sewage overflows, giving consideration to volume of base flow versus wet well capacity; proximity to surface water bodies; geographic distance from portable equipment.

PROJECT NEED: Improved Level of Service

### Adopted Budget (includes inflation)

S-59	2015	2016	2017	2018	2019	2020	2021
	\$74,000	\$76,000	\$312,000	\$417,000	\$290,000	-	-

### Proposed Changes

Scope: Four pump stations were identified as needing on-site generation during the preliminary design--one more station than previously envisioned. Facilities are recommended at Evergreen East, Evergreen West, Lake Hills PS #16, and Palisades. Fortunately, Evergreen East and West are close enough that they can share the same generator.

The cost to add a generator at Lake Hills PS 16 may prove more expensive than reasonable, due to site constraints. Predesign during 2016 will include value analysis; it's possible another site will be selected based on that study. Design and construction for the third site is not included in this budget.

Schedule: Project schedule has been extended two years, to be completed in 2020.

Cost: Increased cost \$438,000 for first two stations is based on preliminary design study. Design and construction cost for the third station is not included in this budget. It may be proposed in the next budget cycle based on study outcome.

### Proposed Budget (includes inflation)

S-16	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	\$74,000	\$76,000	\$312,000	\$417,000	\$290,000	\$0	\$0	\$0	\$0
Proposed	\$74,000	\$76,000	\$257,000	\$545,000	\$229,000	\$0	\$0	\$0	\$0
Difference	\$0	\$0	(\$55,000)	\$128,000	(\$61,000)	\$0	\$0	\$0	\$0



Detailed Budget Development: *(inflation included in totals; project costs in 2015\$)*

S-59	2015	2016	2017	2018	2019	2020	2021	2022	2023
Onsite Power Predesign Study	\$84,000								
Evergreen East & West Generator		\$95,000	\$185,000	\$450,000					
Palisades PS Generator			\$60,000	\$60,000	\$210,000				
Lake Hills #16 PS Generator (predesign and value engineering)		\$45,000							
Total (2015\$) uninflated	\$84,000	\$140,000	\$245,000	\$510,000	210,000	0	0	0	0
<b>Proposed Budget (inflated)</b>	<b>\$74,000</b>	<b>\$76,000</b>	<b>\$257,000</b>	<b>\$545,000</b>	<b>\$229,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Cost beyond 2023: None

**Policy Input Requested:** Should the scope, schedule and budget be revised as proposed?

## S-60 Wilburton Sewer Capacity Upgrade

### **Adopted Description and Scope**

This project will replace approximately 2,000 feet of 12-inch diameter pipe with larger diameter pipe to provide sufficient capacity for anticipated upstream development. Design alternatives which achieve similar objectives will be evaluated during pre-design.

PROJECT NEED: System Expansion

### **Adopted Budget (includes inflation)**

S-60	2015	2016	2017	2018	2019	2020	2021
	\$5,253,000	\$2,832,000	-	-	-	-	-

Note: Adopted 2016 budget was \$952,000. Budget increased by 1,880,000 on 4/20/2015, from R&R (S-96) due to higher final bid.

### **Proposed Changes**

Scope: No change.

Schedule: Construction completion is anticipated in 2017. Permit-required monitoring will extend through 2022.

Cost: Budget increased \$50,000 to reflect anticipated post-construction monitoring costs.

### **Proposed Budget (includes inflation)**

S-60	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	\$5,253,000	\$2,832,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Proposed	\$5,253,000	\$2,832,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$0
Difference	\$0	\$0	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$0

Cost beyond 2023: None

**Policy Input Requested:** Should the budget be increased as proposed?

## S-61 Midlakes Pump Station Capacity Improvements

### **Adopted Description and Scope**

This project will replace the existing Midlakes sewer pump station with a larger one, to provide capacity for planned growth in the Bel-Red Corridor through 2030.

PROJECT NEED: System Expansion

### **Adopted Budget (includes inflation)**

S-61	2015	2016	2017	2018	2019	2020	2021
	\$1,684,000	\$1,730,000	-	-	-	-	-

### **Proposed Changes**

Scope: No change is proposed

Schedule: Completion is now anticipated in 2017. (Unexpended \$ from 2016 will carry forward)

Cost: No change proposed.

### **Proposed Budget (includes inflation)**

S-61	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Total</b>	\$1,684,000	\$1,730,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Cost beyond 2023: None

**Policy Input Requested:** None

**If project is completed in 2016; this won't be included in CIP update**

## **S-63 Utility Facilities for 120<sup>th</sup> Ave NE Improvements (Segment 2)**

### **Adopted Description and Scope**

This project will design and construct new sewer pipe in 120th Ave NE in conjunction with street improvements, and where needed to provide sewer service for redevelopment of adjacent properties consistent with the Bel-Red Corridor Final Report. The project is broken down into segments. Segment 2 is from NE 8th St to NE 12th St and will construct approximately 700 feet of 15-inch or 18-inch pipe.

PROJECT NEED: System Expansion

### **Adopted Budget (includes inflation)**

S-63	2015	2016	2017	2018	2019	2020	2021
	\$341,000	\$151,000	-	-	-	-	-

Note: Adopted 2015 budget was \$751,000. Budget savings transfer of 410K on 4/20/2015, to S-52.

### **Proposed Changes**

Scope: No change.

Schedule: No change. Project is in construction.

Cost: No change.

### **Proposed Budget (includes inflation)**

S-63	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Total</b>	<b>\$341,000</b>	<b>\$151,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

**Policy Input Requested:** None

## S-66 Sewer System Pipeline Replacement

### Adopted Description and Scope

This program replaces poor condition sewer pipe throughout the service area. The current budget is estimated to replace sewer pipe at a rate of 0.5 to 0.75 miles per year. Pipes are replaced when life cycle cost analysis indicates replacement is more economical than continuing to make point repairs. Replacement methods may include trenchless rehabilitation techniques such as cured-in-place pipe, and pipe bursting, and/or open trench replacement. This program compliments S-24, Sewer System Pipeline Repair, which repairs pipes to extend their service life. This program implements Bellevue's asset management program strategy to meet expected and required customer service levels at the lowest life cycle cost.

PROJECT NEED: System Renewal and Replacement

### Adopted Budget (includes inflation)

S-66	2015	2016	2017	2018	2019	2020	2021
	\$1,102,000	\$1,132,000	\$1,154,000	\$1,178,000	\$1,201,000	\$1,225,000	\$1,250,000

### Historical Expenditures

S-66	2009	2010	2011	2012	2013	2014	2015
	-	-	-	-	\$218,000	\$796,000	\$1,345,000

### Proposed Changes

Scope: Add two significant projects:

- Newport Shores Sewer Line, to avoid direct sanitary sewer overflows to surface water.
- Woodridge Open Space Sewer Replacement, where pipe was discovered to have no bottom.

Where possible, other projects have been delayed to accommodate addition of these two projects. These are significant repair projects which shouldn't be deferred farther than as shown.

It is likely more projects will be identified for the outer years, with future program cost increases likely.

Schedule: Projects have been scheduled as shown in the table below. For some, such as recently discovered Woodridge Open Space defect, repair is time-critical to prevent sewer overflows. For others, the schedule is required to coordinate with planned Transportation work. Where possible, projects have been delayed to accommodate the new projects.

Cost: Significant \$2.7 million budget increase is needed to construct known replacement/relining projects through 2021, plus addition of new program years.

### **Proposed Budget (includes inflation)**

S-66	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	\$1,102,000	\$1,132,000	\$1,154,000	\$1,178,000	\$1,201,000	\$1,225,000	\$1,250,000	\$0	\$0
Proposed	\$1,102,000	\$1,132,000	\$3,143,000	\$1,458,000	\$1,144,000	\$1,745,000	\$1,219,000	\$1,157,000	\$1,770,000
Difference	\$0	\$0	\$1,989,000	\$280,000	(\$57,000)	\$520,000	(\$31,000)	\$1,157,000	\$1,770,000

### **Detailed Budget Development: (inflation included in totals; project costs in 2015\$)**

S-66	2015	2016	2017	2018	2019	2020	2021	2022	2023
CrossRoads 15th	\$3000	\$0	\$100,000	\$25,000	\$600,000	\$0	\$0	\$0	\$0
Downtown Park	\$670,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Vuecrest Side Sewers	\$45,000	\$170,000	\$2,100,000	\$0	\$0	\$0	\$0	\$0	\$0
Bogline Sewer Replacement	\$45,000	\$0	\$0	\$100,000	\$50,000	\$1,510,000	\$0	\$0	\$0
Ballpark Sewer Replacement	\$3,000	\$0	\$0	\$0	\$0	\$60,000	\$485,000	\$0	\$0
120th NE Roadway Sewer Replacement	\$415,000	\$35,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
San Sewer Repl - Aqua Vista	\$30,000	\$0	\$0	\$0	\$0	\$0	\$590,000	\$700,000	\$0
Woodridge Open Space Sewer Repl.	\$12,000	\$315,000	\$700,000	\$0	\$0	\$0	\$0	\$0	\$0
Beaux Arts Sewer Lake Line Rehab	\$40,000	\$0	\$0	\$70,000	\$400,000	\$0	\$0	\$0	\$0
Newport Shores Sewer Line	\$4,000	\$310,000	\$400,000	\$1,170,000	\$0	\$0	\$0	\$0	\$0
Future Sewer Line Project 1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$300,000	\$1,200,000
Future Sewer Line Project 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$300,000
Total, Uninflated (2015\$)	\$1,260,000	\$830,000	\$3,300,000	\$1,365,000	\$1,050,000	\$1,570,000	\$1,075,000	\$1,000,000	\$1,500,000
<b>Total Proposed Budget (inflated)</b>	<b>\$1,102,000</b>	<b>\$1,132,000</b>	<b>\$3,143,000</b>	<b>\$1,458,000</b>	<b>\$1,144,000</b>	<b>\$1,745,000</b>	<b>\$1,219,000</b>	<b>\$1,157,000</b>	<b>\$1,770,000</b>

### **Policy Input Requested:**

Should the budget for this program be increased as proposed?

## S-67 I&I Investigations and Flow Monitoring

### Adopted Description and Scope

This program will investigate the source and magnitude of inflow and infiltration (I&I) of storm and groundwater into the wastewater system at locations where suspected high I&I is currently or is forecast to exceed conveyance and/or pump station capacity. The 2014 (Draft) Wastewater System Plan recommends this work with a goal of identifying and removing non-sewage flow where that would reduce surcharging such that costly capacity improvements might be avoided. Flow monitoring in five sewer basins is planned for 2015 and 2016. I&I investigation of eight basins is planned, in priority order: Newport, Fairweather and Cozy Cove, Wilburton, Lake Heights, Eastgate, Somerset, and Factoria.

PROJECT NEED: System Renewal and Replacement

### Adopted Budget (includes inflation)

S-67	2015	2016	2017	2018	2019	2020	2021
	\$211,000	\$259,000	\$313,000	\$220,000	\$225,000	-	-

### Proposed Changes

Scope: The scope has been refined since adoption of the WWSP. Flow monitoring and investigation work is proposed in basins with reported capacity-related overflow events. In priority order: Fairweather, Newport, Somerset, Medina, Cozy Cove, and Eastgate. Additional work in other basins may be performed if new overflows or significant surcharging is identified. A process review of how I&I defects are identified during visual inspections will also be developed (targeted I&I line in table)

Schedule: Schedule has been updated to reflect consultant contract.

Cost: No change.

### Proposed Budget (total includes inflation; project costs in 2015\$)

S-67	2015	2016	2017	2018	2019	2020	2021	2022	2023
Flow Monitoring (5 basins)	\$30,000	\$90,000	\$100,000	\$75,000	\$0	\$0	\$0	\$0	\$0
Targeted I&I	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
I&I Basin 36 (Newport )	\$3,000	\$100,000	\$15,000	\$0	\$0	\$0	\$0	\$0	\$0
I&I Basins 1 (Fairweather)	\$3,000	\$115,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
I&I Basins 3 (Cozy Cove)	\$3,000	\$0	\$0	\$0	\$55,000	\$0	\$0	\$0	\$0
I&I Basin 2 (Medina)	\$3,000	\$0	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0
I&I Basins 39, 40 (Eastgate & Somerset)	\$3,000	\$0	\$185,000	\$150,000	\$0	\$0	\$0	\$0	\$0
Future basins w/ surcharging	\$0	\$0	\$0	\$0	\$0	\$86,000	\$0	\$0	\$0
Total, uninflated (2015\$)	\$55,000	\$305,000	\$300,000	\$225,000	\$205,000	\$86,000	\$0	\$0	\$0
<b>Total Proposed Budget (inflated)</b>	<b>\$211,000</b>	<b>\$259,000</b>	<b>\$199,000</b>	<b>\$240,000</b>	<b>\$223,000</b>	<b>\$96,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

Cost beyond 2023: None

Policy Input Requested: None

## S-68 Sewer Force Main Condition Assessment

### Adopted Description and Scope

This project will assess the structural condition of pressurized sewer mains (known as 'force mains') that are more than 30 years old, and use that information to develop a force main renewal and replacement plan. Representative pipe samples will be collected from asbestos cement (AC) force mains; specialized pipe assessment equipment will be used for cast iron force mains. Condition will be evaluated and remaining useful life estimated. Force mains comprise 5.8 miles of the 526 total miles of public sewer pipe.

PROJECT NEED: System Renewal and Replacement

### Adopted Budget (includes inflation)

S-68	2015	2016	2017	2018	2019	2020	2021
	\$258,000	\$264,000	\$270,000	\$275,000	\$281,000	-	-

### Proposed Changes

Scope: The scope has been refined since adoption of the WWSP and per the Asset Management program. Condition and risk will be evaluated to estimate renewal and replacement schedules for force mains. Specialized pipe assessment equipment will be used to evaluate pipe condition, and representative pipe samples will be collected from some force mains.

Schedule: The schedule and cost per year have been adjusted based on refined project scoping.

Cost: Project costs have been reduced \$398,000 based on refined program scope and preliminary engineering.

### Proposed Budget (includes inflation)

S-68	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	\$258,000	\$264,000	\$270,000	\$275,000	\$281,000	\$0	\$0	\$0	\$0
Proposed	\$258,000	\$264,000	\$208,000	\$220,000	\$0	\$0	\$0	\$0	\$0
Difference	\$0	\$0	(\$62,000)	(\$55,000)	(\$281,000)	\$0	\$0	\$0	\$0

Cost beyond 2023: None

### Policy Input Requested:

None



## S-69 Meydenbauer Bay Park Sewer Line Replacement

### Adopted Description and Scope

This project will replace the poor condition sewer line currently under Meydenbauer Bay with a new pipe located on land through the Meydenbauer Bay Park. This project was previously included in the scope of S-58; it has been separated for improved transparency and accountability. The project schedule has been delayed until 2017 to better coordinate with Meydenbauer Bay Park development. The project cost has been revised based on improved engineering estimates.

PROJECT NEED: System Renewal and Replacement

### Adopted Budget (includes inflation)

S-69	2015	2016	2017	2018	2019	2020	2021
	\$62,000	\$286,000	\$1,888,000	\$265,000	-	-	-

### Proposed Changes

Scope: The scope will be revised to reflect that the new pipe will be located on the shoreline near the current pipe location because of possible conflicts with future park redevelopment if it were located in upland park areas.

Schedule: The project budget is accelerated to meet the Park Development schedule, with completion anticipated in 2017.

Cost: No change is proposed

### Proposed Budget (includes inflation)

S-69	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Total</b>	\$62,000	\$286,000	\$2,153,000	\$0	\$0	\$0	\$0	\$0	\$0

Cost beyond 2023: None

Policy Input Requested: None

## S-70 Sound Transit East Link Corridor within Bellevue City Limits

### Adopted Description and Scope

PROJECT NEED: System Renewal and Replacement

### Adopted Budget (includes inflation)

S-70	2015	2016	2017	2018	2019	2020	2021
	\$2,214,000	-	-	-	-	-	-

Note: Adopted 2015 budget was \$1,925,000. Budget increased by \$289,000 to reflect agreement (inflation).

### Proposed Changes

Scope: No change.

Schedule: No change.

Cost: No change proposed. The total cost of this project is \$2,214,000.

## S-NEW-2-M Land Acquisition for North End Yard

### Proposed Description and Scope

This project provides budget to acquire land in the north end of Bellevue for siting of a municipal maintenance facility (North End Yard site). Site acquisition would be based on the results of analysis done under separate CIP proposal (W-NEW-4-M). Funding for development of this yard is not included in this project.

Currently, Utilities and other operating departments based at the BSC spend an estimated 20-25% of their day traveling to and from work sites and the Eastgate Yard (address) to haul debris and spoils, to decant, and to access supplies such as crushed rock. A maintenance yard in the north end would reduce travel times and improve productivity by improving the proximity of materials and to decant facilities and a location to dump spoils. The goal is to increase productivity through reduced travel times and efficiencies.

PROPOSED SCHEDULE: Site acquisition is anticipated in 2019-20

PROJECT NEED: Capacity for Growth

### Proposed Budget (includes inflation)

S-NEW-2-M	2015	2016	2017	2018	2019	2020	2021	2022	2023
	0	0	0	0	\$3,333,000	\$3,333,000	0	0	0

Cost beyond 2023: None. Property development costs are not included in this project.

Total Project Cost: Estimated cost is \$20,000,000. Cost would be spread equally across three utility funds (Water, Sewer, and Storm)

### Policy Input Requested:

Should this project be added to the Sewer Capital Investment Program? (and Water and Storm)

### **Proposed Description and Scope**

This program is to implement Advanced Metering Infrastructure (AMI) throughout Bellevue. Implementation is the third phase of this project (following Business Case development in 2014, Phase 1 Feasibility Study in 2015-16, and Phase 2 Vendor Selection).

Bellevue's current water meters cannot provide real-time data, meaning leaks can go on for long periods before they are identified, resulting in high customer bills and unhappy customers. (Meters are read on a 2-month cycle; significant labor costs would be involved with modifying billing frequency). Customers cannot self-monitor water use except bi-monthly via MyUtilityBill.

The AMI project will provide the following benefits:

1. Financial Benefits (improved billing and meter accuracy, reduced labor for meter reading, reduced time between meter read and bill production, reduce capital for meter reader vehicles and inventory, reduced manual processing, improved system planning due to availability of local water flow data for modeling, etc.)
2. Social Benefits (increased responsiveness to customers, accurate and timely billing, reduce turnaround time related to off-cycle reads, master data management for data mining, leak detection and reporting, staff and customer alarms/notifications, etc.)
3. Environmental Benefits (water conservation through leakage detection, prevent contamination of the public water supply through detection of negative and flow pressure, backflow detection, reduce meter vehicle emissions, etc.)

Based on initial evaluations, the total life cycle cost to implement and use AMI is \$42,000,000. The first capital cost (total less ongoing operating and maintenance cost) is \$22,845,000, which would be split between water and sewer utilities (50/50).

There will be ongoing operating costs associated with this program.

**PROPOSED SCHEDULE:** Full implementation by 2020.

**PROJECT NEED:** System Renewal and Replacement, Improved efficiency and functionality

### **Proposed Budget (includes inflation)**

S-NEW-4-M	2015	2016	2017	2018	2019	2020	2021	2022	2023
	0	0	\$150,000	\$4,032,000	\$8,064,000	\$0	\$0	\$0	\$0

Cost beyond 2023: There will be ongoing operations and maintenance costs associated with this project.

Total Project Cost: The initial capital cost, including installation of new meters, replacement of meter boxes and lids, installation of meter interface units (MIUs), integration costs, and project management costs is estimated at \$22,845,000, spread equally between water and sewer funds.

**Policy Input Requested:** Should this project be added to the Sewer (and Water) Capital Investment Program?